DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of embodiment 3 including claims 9, 10, 13, 14, 17 and 20 in the reply filed on 08/10/2009 is acknowledged.

Information Disclosure Statement

The information disclosure statement filed 11/02/2006 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the all or a portion of the two or more photodetectors and light-emitting devices have a common electrode pattern must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

invention. The disclosure does not provide the ordinary skill artisan with a reasonable expectation of success in creating or carrying out the claimed subject matter, since it does not provide any guidance as to how to make all or a portion of the two or more photodetectors and light-emitting devices having a common electrode. Without this disclosure, one of ordinary skill cannot practice the invention without undue experimentation because of the number of operational parameters in the process.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Akihiko et al (JP 05-067769).

Akihiko et at discloses an optical input/output substrate (Fig. 2), which is a substrate (S1) on which a semiconductor integrated circuit (211 in region 2) can be mounted; comprising: two or more photodetectors (Pd) capable of converting optical signals that are received as input to electrical signals and supplying these electrical signals to a mounted semiconductor integrated circuit; and two or more light-emitting devices (Em) capable of converting electrical signals that supplied as output from a mounted semiconductor integrated circuit to optical signals and supplying these optical signals as output; wherein the heights of said two or more photodetectors are identical, and moreover, the heights of said two or more light-emitting devices are identical.

Regarding claim 17, the claim limitation "the melting point of solder for securing said photodetectors to said substrate is different from the melting point of solder for securing said light-emitting devices to said substrate" is taken to be a product-by-process limitation. A product-by-process claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See In re Fessman, 180 USPQ 324, 326 (CCPA 1974); In re Marosi et al., 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Regarding claim 20, Akihiko further discloses an optical-element integrated semiconductor integrated circuit (Fig. 15),wherein a semiconductor integrated circuit (211) is mounted on an optical input/output substrate (201, 202), and electrical signals that have been converted by photodetectors (213) belonging to the optical input/output substrate are supplied as output to electrical signal input ports of this semiconductor integrated circuit, and electrical signals that are supplied as output from electrical signal output ports of the semiconductor integrated circuit are converted to optical signals by light-emitting devices (212) belonging to the optical input/output substrate and supplied as output.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akihiko et al (JP 05-067769) in view of Takeshi (JP 04-061175).

Akihiko as described above does not disclose that the heights of the two or more photodetectors and the heights of the two or more light-emitting devices are identical. However, it is old as shown for example by Takeshi to form the photodetector (1) and the light-emitting device (3) of identical heights (see Fig. 8). Therefore, forming the two or more photodetectors and the two or more light-emitting devices of Akihiko of identical heights would have been obvious modification.

Claims 13-14, insofar as in compliance with 35 USC 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Akihiko et al (JP 05-067769).

Akihiko as described above does not disclose that all or a portion of the two or more photodetectors and light-emitting devices have a common electrode pattern. It is old to form a common electrode pattern for all or a portion of the two or more photodetectors and light-emitting devices. As such, forming a common electrode pattern for all or a portion of the two or more photodetectors and light-emitting devices would have been prima facie obvious.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F. Tran whose telephone number is (571) 272-1665. The examiner can normally be reached on 7:30AM - 4:00PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew N. Richards can be reached on (571) 272-1736. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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